

Scoping Study Report Vol. 1 Executive Summary

October 2015



Scoping Study and Master Plan for Sustainable Transport in Ohangwena, Omusati, Oshana and Oshikoto



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**Scoping Study and Master Plan for Sustainable Transport
for
Ohangwena, Omusati, Oshana and Oshikoto Regions**

Scoping Study Report (Vol. 1 Executive Summary)
October 2015

The responsibility for the project and its implementation lies with
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in consortium with



and



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List of Acronyms and Abbreviations

%	Percent
Act	Act of Law
AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AN	Air Namibia
ANPR	Automatic Number Plat Recognition
AV	Aviation
B	B Road Classification
C	C Road Classification
A, B, C, D, F, IP, T, 1, 2, 3	References to activities in the Regional and Local government development Planning documents.
CEO	Chief Executive Officer
CCN	Council of Churches of Namibia
CRO	Chief Regional Officer
CCTV	Close Circuit Television
ERJ135	Type and Model of Aircraft
GDP	Gross Domestic Product
Gini	Gini Coefficient
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
h	Hour
ITMP	Integrated Transport Master Plan
JICA	Japan International Cooperation Agency
ITS	Intelligent Transport Systems
km	Kilometre
LA	Local Authority
LED	Light emitting diodes
M	M Road Classification
M&E	Monitoring and Evaluation
MDC	Mass Distance Charge
MND	Ministry of National Development
MR	MR Road Classification
MLTRMP	Medium- to Long-term Roads Master Plan
MRLGHRD now MURD	Ministry of Regional and Local Government, Housing and Rural Development, now Ministry of Urban and Rural Development
MTEF	Medium Term Expenditure Framework
MTI	Ministry of Trade and Industry
MVAF	Motor Vehicle Accident Fund
MWT	Ministry of Works and Transport
MURD	Ministry of Urban and Rural Development
N\$	Namibian Dollar
NABTA	Namibian Bus and Taxi Association
NAC	Namibian Airports Company
NCCI	Namibia Chamber of Commerce and Industry

NDP	National Development Plan
NDP3	National Development Plan No. 3
NDP4	National Development Plan No. 4
NGO	Non-governmental Organisation
NLA	Namibia Logistics Association
NMT	Non-motorised Transport
NPC	National Planning Commission
NPPTA	The Namibia Public Passenger Association
NTTU	Namibia Transport and Taxi Union
OD	Origin-Destination
PA	Professional Authorisation
Pax	Passenger
PoN	Polytechnic of Namibia
PPD	Policy and Planning Directorate
PPP	Public Private Partnership
PSO	Public Service Obligation
Pty	Propriety
PTZ	Pan/Tilt/Zoom
PWD	People with Disabilities
RA	Roads Authority
RC	Regional Council
RFA	Road Fund Administration
RMS	Road Maintenance Management System
ROW	Right of Way
RUC	Road User Charges
RRMP	Revision of the Oshikoto, Oshana, Omusati, Ohangwena and Kavango Roads Master Plans (Study)
RSCN	Road Safety Council of Namibia
SADC	Southern African Development Community
SH45	Taxi Operators Home Base of Operation
SUTMP	The Sustainable Urban Transport Master Plan for Windhoek
SW 101	Flight Code
T	T Road Classification
TC	Town Council
TCC	Traffic Control Centre
TSS	Traffic Surveillance System
UITP	International Association of Public Transport
UNAM	University of Namibia
VIP	Very Important Persons
VOC	Vehicle Operating Cost
Vol	Volume
VMS	Vehicle Message System
WBCG	Walvis Bay Corridor Group
WiFi	Local Area Wireless Computer Networking Technology
YWCA	Young Women's Christian Association

1 Executive Summary

1.1 Introduction

The four Northern regions Ohangwena, Omusati, Oshana and Oshikoto are amongst the most populated of the fourteen regions of Namibia. This area has vast economic and social development potential and opportunities that would be further advanced through improvement in transport accessibility, connectivity and mobility - the purpose for this project.

Different measures of transport improvements

Connectivity is a measure, which is usually applied to longer journeys to access selected, significant destinations; the focus is here on access to particular strategic destinations including regional centres, ports and airports, rail stations, bus stations and major road junctions.

Accessibility provides a local-level measure of the availability of transport to key services such as (food) stores, education and health care centres or employment centres.

Mobility is a measure of the time and costs required for travel. Mobility is higher when average travel times, variations in travel times, and travel costs are low.

Transport infrastructure improvements will play a key role to improve the connectivity of the four regions in relation to its major local and regional markets and the port in Walvis Bay. The improvement of access to transport will also be essential to better integrate the population in the regional economic and social activities. This will enable the regions to participate and contribute to the national objectives e.g. Vision 2030 and to the National Development Plans.

However, transport improvements are not only related to infrastructure, but there are many more dimensions that need to be addressed to make transport systems more sustainable. For instance, most citizens in the North rely on public transport and an affordable public transport system will allow the urban and rural population to participate more easily in economic activities. Affordable mobility will give them more direct and effortless access to their working places and to services such as health or education facilities. This will increase their economic opportunities and quality of life.

1.2 Project output and objectives

To achieve better transport outcomes for the communities of the four regions, the Ministry of Works and Transport (MWT) and the Ministry of Urban and Rural Development (MURD) with the assistance from the German Federal Ministry for Economic Cooperation and Development through its implementing agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, have provided funding to support this project.

The foreseen output of the project is the preparation of an urban and regional transport master plan with the purpose of developing a set of strategic interventions or initiatives necessary to assist both the MWT and the RCs and LAs in delivering improved transportation infrastructure, facilities, and services which meet the needs and expectations of users. This project was devised as a direct result of the government's observation that the planning of service delivery including transportation needs to improve, if the aims and objectives of Vision 2030 and the National Development Plans are to be achieved. Government has singled out the transport sector as one of the key sectors to enable growth in economic development leading to a number of economic benefits including poverty eradication.

The overall objective of phase 1 of the scoping study is to provide the necessary information and guidance based on consultations held with transport users and suppliers of the four regions to enable the Ministry of Works and Transport (MWT) and the Ministry of Urban and Rural Development (MURD) to decide whether the formulation of a regional transport master plan will assist regional councils and local authorities to deliver more efficient and effective transport.

To achieve this, the following specific objectives were identified for phase 1:

1. Investigate the issues/concerns/and challenges raised by stakeholders during the scoping study workshops;
2. Collect further data to be used in undertaking more detailed assessments where data is not currently available;
3. Report back to the stakeholders on the results of the investigations and analyses undertaken and the proposals put forward to address issues/concerns/and challenges raised; and
4. On the basis of the findings from the additional data collection and analysis, propose cost-effective solutions for presentation to stakeholders. Further studies including undertaking pilot projects could also be considered for inclusion to the regional transport master plan.

1.3 Anchor points for the project

National level and sub-sector development plans

Over the past five years the Government of the Republic of Namibia initiated the formulation of a number of higher level transport sector strategic development plans which have provided the necessary guidance to undertake development activities to support Vision 2030. The *2014 Integrated Transport Master Plan (ITMP)* addressed the long-term strategic investment development needs of the road, rail, aviation, and maritime sectors necessary to support the government's objective of positioning Namibia as a major transport hub for the Sub-Saharan Africa Region. On the back of the completion of the ITMP, the government launched the preparation of a number of more detailed sub-sector development plans including the *Master Plan for the Development of an International Logistics Hub for SADC Countries in the Republic of Namibia (2015)*, and the update of the *Oshikoto, Oshana, Omusati, Ohangwena and Kavango Road Master Plan (ongoing)* aimed at supporting the objectives of the government's Fourth National Development Plan.

More recently and in line with the objectives of NDP4, the government has also initiated a *Review and Update of the 1992 Transport Sector White Paper* to more accurately reflect the changing needs of the transport sector in fulfilling its role for economic and social development, and, contributing, at the same time to improving transport planning at the regional level.

Regional level development plans

With the exception of the preparations conducted by the National Planning Commission for the governments' national development plans, delivery of transport infrastructure, facilities, equipment, and services is relatively 'loosely' coordinated between national and regional level governments through various formal and semi-formal 'as and when needed' meetings. No planned coordination, otherwise, takes place for the planning of intra and inter-regional transportation.

A review of the development strategy documents of the regions indicates that there are only in a few cases specific developments in the transport sector mentioned. And in the near future only the Municipality of Tsumeb plans to commission a transport development plan to guide the future development of its transport needs. Other LAs had indicated in their strategies that they have a number of other planning priorities including providing the necessary housing before they can turn their attention to transport planning. The ability to finance investment projects limits the extent to which the regional councils and local authorities/municipalities can seek loans or generate sufficient revenues to service their development plans including the delivery of transport facilities and services.

The Move Windhoek Project as a starting point

The basis for the preparation of this project has been the recent development of a sustainable urban transport development strategy for Windhoek.

The Sustainable Urban Transport Master Plan for Windhoek (SUTMP) had been prepared on the basis of extensive stakeholder consultations and public meetings giving all users a "voice" in the development of priority transport infrastructure and services for the Namibian capital. Travelers in Windhoek, like many other urban and rural travellers across Namibia have raised concern about the way in which public transport is being delivered.

Prior to independence TransNamib provided a national wide bus service connecting rural communities with regional centres, and regional centres to the capital Windhoek. At independence, the government rather than continue to subsidise the services decided to open up the market to competition and curtailed the practice of subsidising inter and intra-regional public transport. Over time the transport needs of both rural and urban travellers have then been met by the expansion of the inter-regional long-distance minibus and short to medium distance taxi industry.

The faster more frequent minibus services operated by the private sector have eroded the railways share of the inter-regional passenger transport market. In the more remote areas, transport needs are commonly met by people with private 4x4 transport. Inter-regional transport needs are met by the longer distance minibus operators, bus and luxury coach operators.

Discussion with both transport users and operators show that people see a need to improve the way in which transportation is delivered. Currently, the provision of road transport services, in particular bus and taxi services is not focused on meeting the needs of transport users. Discussion with some civil society groups has indicated that access to transport is of great concern to rural communities as well as a number of marginalised communities predominantly low income groups, learners, and people with disabilities.

1.3.1 Stakeholder consultation process

The project hosted four stakeholder workshops in February 2015, inviting participants from regional and local government and key public/private sector representatives. Participants were invited to discuss and raise issues/concerns and identify the challenges being faced in meeting their transportation needs (the stakeholders). Additionally, participants were asked to propose possible solutions, they thought would be effective in addressing many of the issues and concerns raised.

A second series of stakeholder workshops was held in August/September 2015 in each of the four regions. The main purpose of these workshops was to report back to the participants of the previous workshops and to present to them a series of measures and projects to be included to the sustainable transport master plan to be developed in phase 2 of the project. The detailed comments received at these meetings were then taken into account for preparation of this scoping study report and in particular its section on possible project interventions/measures.



Based on the feedback from stakeholder workshops, and a meeting with the Oshana Men and Women's association whose members work as volunteers with the Namibian Police Force, the project developed and adopted the logo **Transport4People (T4P)**.

The logo was approved by MWT and GIZ for inclusion on the project web portal and other project related materials. The logo also appears on the project's Facebook page and Twitter site.

It is expected that the T4P project will contribute to gradually developing an inclusive, cost-effective and sustainable transport system for the people in the four Northern regions.

1.4 Social, administrative and economic background

The four regions Ohangwena, Omusati, Oshana and Oshikoto cover just over 10.4 percent of Namibia's total land area of 84,589 km². However, the regions are home to around 40% of the country's population i.e. 847,279 out of a total of 2.11 million as per the 2011 population and household census. Ohangwena's population is estimated at around 245,446, followed by Omu-sati with 228,842, Oshikoto with 181,973 and Oshana with 176,674.

During the Christmas to New Year period a much higher share of the population can be found in the northern regions, visiting with friends and family. This periodic spike in the population puts exceptional stress on local infrastructure, restaurant and supermarket stocks, as well as fuel supplies and public transport services. Roads become congested, medical and pharmaceutical facilities come under undue pressure, and the limited supply of inter-regional transport leaves many families and individuals living on the streets close to bus stops waiting for a seat home.

Population growth for the country as a whole is currently estimated at about 1.4%, but is expected to rise with improvement in health and education, increase of employment opportunities, higher levels of disposable household incomes, improved nutrition, all of which increase life expectancy.

1.5 Regional transport availability

The northern regions as a public transport catchment area for both inter-regional and intra-regional transportation are connected to the capital city of Windhoek and to other destinations within the country. The C41 from Okahao, the C45 from Eenhana, and the C46 from Ruacana link up with the B1 highway at Tsumeb. The B1 forms the backbone of the country's road network and if for any reason it is cut due to flooding or other disasters, the northern region would be for a time cut off from the rest of the country. The region with the highest density paved rural roads per km/sq is Omusati with 18 km per 1000km/sq. Oshikoto has the lowest density of the four regions with 12 km per 1000km/sq.

In general, the following describes the availability of transport infrastructure and services in the four regions:

- 1 The northern areas of the four regions lying close to the border with Angola are better served by both paved and unpaved road networks. However, there are large areas of the four regions where no formally engineered rural road network exists.
- 2 Rural communities inhabiting these areas can for the most part of the year travel by open backed four-wheel drive transport but mainly rely on private transport.
- 3 The region is served by one airport at Ondangwa with daily services operating to and from Windhoek.
- 4 A rail passenger service operates between Ondangwa and Windhoek but only on a limited basis.
- 5 Road transport is the main mode of transport with regular in-regional passenger services being offered by private minibus operators. Namib Contract Haulage Pty. Ltd offers pre-scheduled and rental inter-regional transport services to local and international clients

across Namibia and the Southern African Development Community (SADC), and an inter-regional privately operated luxury coach service (Inter-Cape from South Africa) is connecting Namibia with destinations outside of the country including South Africa, Botswana, Zimbabwe, Zambia, and Mozambique.

- 6 Public transport services within towns/villages, between towns, and between towns and villages along the B1, C45 and C46 are predominantly provided by taxis. No formal scheduled public transport service operates either within or between the major towns (incl. Ondangwa, Ongwediva, Oshakati, Oshikango, Tsumeb) or between urban and rural areas.

An analysis of the issues and concerns raised by stakeholders showed that many issues/concerns raised were common to the four regions.

1.6 Highest priority issues raised with transportation as it is currently delivered

A list of the key issues raised at stakeholder workshops and identified by the study team are broadly presented as follows (more detail can be found in Vol.2 Main Report):

Sector level including institutional issues:

- Although there is some limited synchronisation of activities in the development of transport infrastructure such as construction of new roads crossing regional boundaries or in addressing road safety, little coordinated planning (including integrated transport and land-use planning) does take place;
- The mobilisation of funding for the sustainable transport master plan was raised as a key issue by some local authorities, which have other pressing priorities (such as social housing) before any public funds could be directed to developing transport facilities; and
- There is a strong need to develop public transport policy to improve access and connectivity choice, level of services, affordability, and reliability/safety.

Rural and urban transport infrastructure:

- There is a need for a rural road network master plan, since the focus in developing the region's road networks has been directed at paved roads;
- Upgrading of gravel roads to sealed roads status was seen as the first step to enabling the communities with poor transport accessibility and connectivity to benefit from improved access to employment opportunities, social services, and regional markets¹; and
- Local authorities need an urban road network hierarchy similar to the road hierarchy for proclaimed roads. Such a hierarchy would provide for more consistent urban road network development, road maintenance planning, urban planning, and traffic management planning.

¹ While suggestions were received to improve a small number of rural roads, the project itself is concentrating more towards formulating a sustainable transport plan addressing issues such as sector support, urban and rural transport services, traffic management, non-motorised transport and road safety. The road infrastructure upgrading, rehabilitation and maintenance side of "the equation" is currently being addressed by a separate study (*Oshikoto, Oshana, Omusati, Ohangwena and Kavango Road Master Plan*). commissioned by the Roads Authority.

Public transport infrastructure:

- Coordination and collaboration between the key public and private sector stakeholder groups must be enhanced to create the basis for regional level public transport planning;
- Management and organisation of the road reserve through towns and villages is a high priority issue, as it relates to provision of properly designed public transport stops and infrastructure for non-motorist transport users and is important from a road safety point of view (main roads as urban activity streets);
- Adequate taxi rank and bus terminal infrastructure (including at railway stations and airports) is required to increase the efficiency and user-friendliness of public transport service provision; and
- Non-motorised off-carriageway pathways should be systematically promoted to accommodate foot traffic, cyclists and travelers with disabilities.

Public transport services:

- Taxi services are an issue of concern, because of price, timeliness, comfort, safety, reliability, and direction of travel;
- Taxi services do not provide services to and from rural communities including travel on unpaved roads;
- Urban taxi services have overlapping boundaries of operation;
- Inter-urban and inter-regional transport mini-bus services are operated to benefit the needs of owners/drivers and not travelers;
- Services are needed to connect schools, shops, markets, social services with informal settlements developing on town boundaries;
- There is a lack of scheduled public transport services including: regional bus services, rural-urban bus services, school bus services and on-demand services e.g. for people with disabilities or persons needing to access medical services;
- Opening up additional aerodrome capacity at Ruacana, Eenhaha, and Tsumeb was suggested – for business/charter, tourism and emergency services. Small charter operators could operate one or two services a week on a circuit basis which would feed into Ondangwa. A small aerodrome could also be developed as a flying school; and
- A rail passenger service could in the future operate from Ondangwa to Oshikango and Eehnana. The services would provide wider access to the existing catchment area for passenger rail travel. However, the existing service between Windhoek and Ondangwa needs to be significantly improved before any such services might be considered.

Traffic management:

- Seasonal traffic flows and the resulting congestion indicate that local authorities should have in place traffic management plans which respond to increased volumes during festive seasons, holidays, and special events. The reason to have a plan in place would be to avoid heavy traffic congestion leading to drivers disobeying traffic rules and regulations thus further contributing to congestion and road safety issues;
- Alternative route plans are also needed for when roads are blocked off by police to facilitate VIP security; and
- A traffic management plan would aid in preparing traffic calming measures to reduce speed on urban and residential roads and should be coordinated with an urban road hierarchy plan.

Non-motorised transport:

- Many travelers if they do not have a private car available, must either use a taxi or walk;
- Urban road infrastructure and facilities have not in the past considered the special needs of users of non-motorised transport incl. people with disabilities;
- Bicycles would become more popular if safety was improved with the construction of cycle paths, linking residential areas to business, places of work and shopping areas; and
- Combined walking/cycle paths would also make transport a better experience in the rainy season.

Road safety:

- Road capacity and road safety can be increased by constructing bypasses and/or upgrading sections of the B1 to dual carriageway status;
- Control and management of livestock grazing within the road reserve should be strengthened;
- Greater attention is to be given to the provision and maintenance of road markings, road signs, and road side furniture;
- Design of road intersections should be improved, including use of roundabouts to aid traffic flow and/or contribute to traffic calming;
- Improving the local environment through the planned diversion of heavy vehicle traffic around towns including provision of driver rest stops (truck ports);
- Better regulation is required in regard to the inspection and licensing of public transport vehicles; and
- There is a need for a systems approach towards road safety improvements, including road safety audits.

1.7 Passenger transport demand modelling

Additional data including regional level origin-destination data was collected and analysed by the project using an existing transport model for Namibia (prepared by the ITMP project). The output of the transport modelling will be used as one of the criteria for the identification of potential transport demand initiated transport projects (such as introduction of regional bus services).

During the surveys, 16,000 passengers were interviewed and almost 67,000 vehicles were counted and selected first results of the model are presented in the figures below.

In terms of vehicles, cars and bakkies represent together three quarter of passenger vehicles while, in terms of passengers, they represent only 68%, because taxis or minibuses have higher occupancy rates.

Figure 1-1: Mode distribution by vehicle (in % of vehicles)

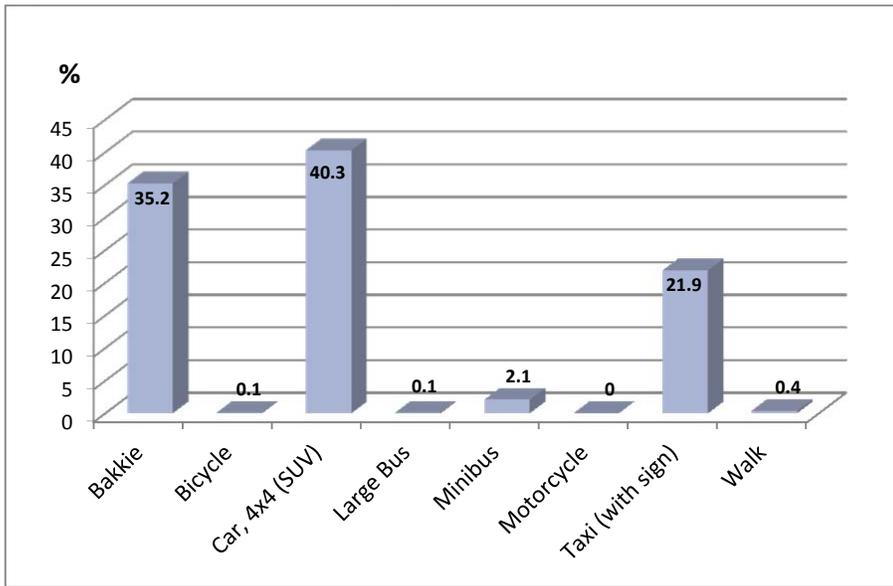
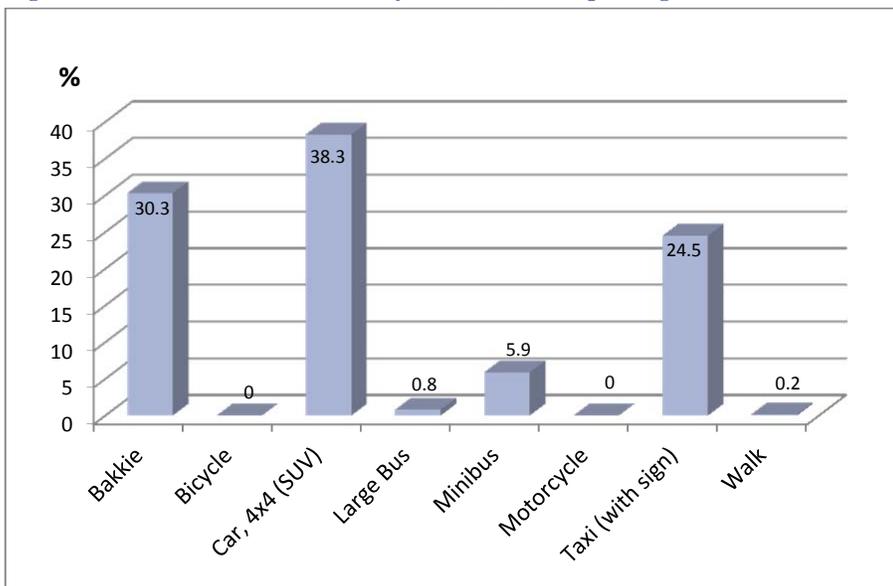
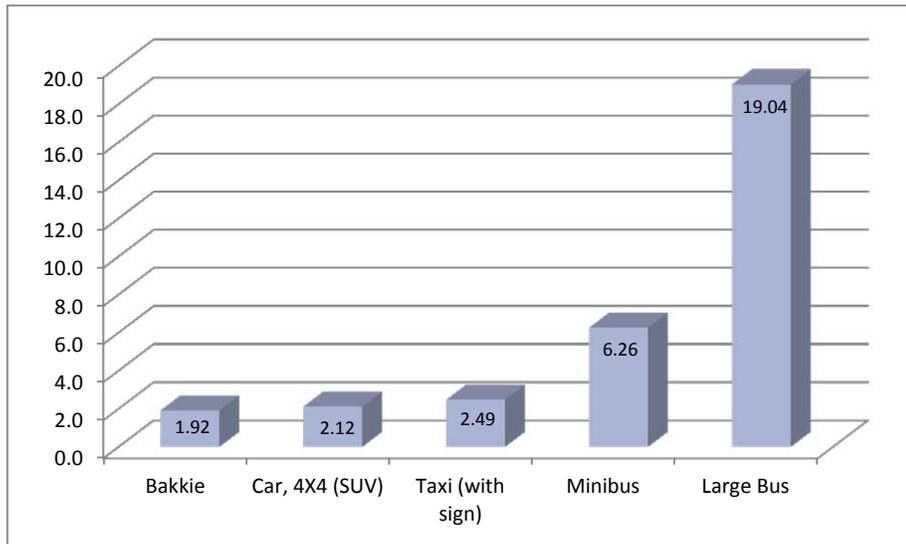


Figure 1-2: Mode distribution by vehicle (in % of passengers)



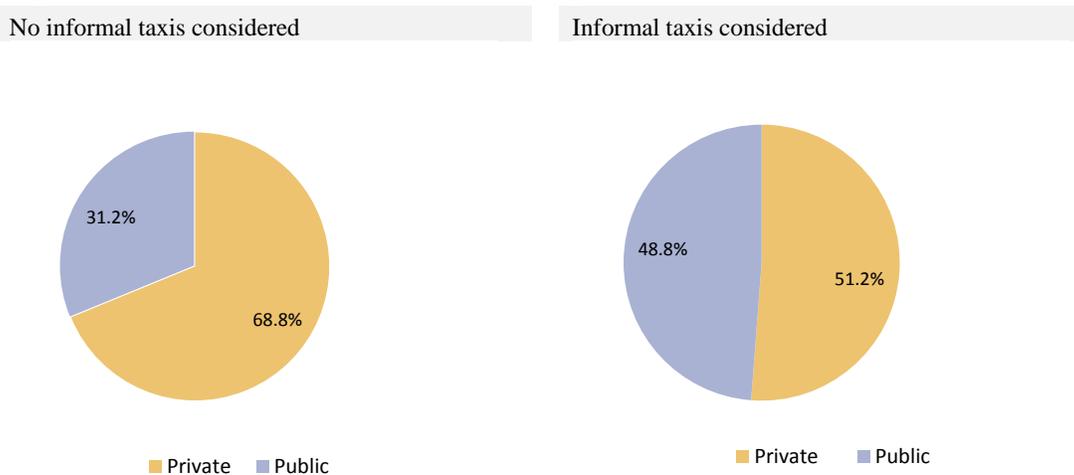
The figure below shows the average number of passengers per vehicle. Logically, public transport vehicles such as buses or taxis carry more passengers than private vehicles such as cars or bakkies. The number of passengers includes the driver for private transport vehicles but not for public transport vehicles (taxi, minibus and large bus).

Figure 1-3: Average number of passengers per vehicle



To compare private and public transport shares, it is necessary to consider the impact of informal taxis. As a first approach cars and bakkies were considered as private transport modes, and taxis, buses and minibuses as public transport modes. This classification led to a share of 68.9% of passengers using private transport and of 31.2% using public transport.

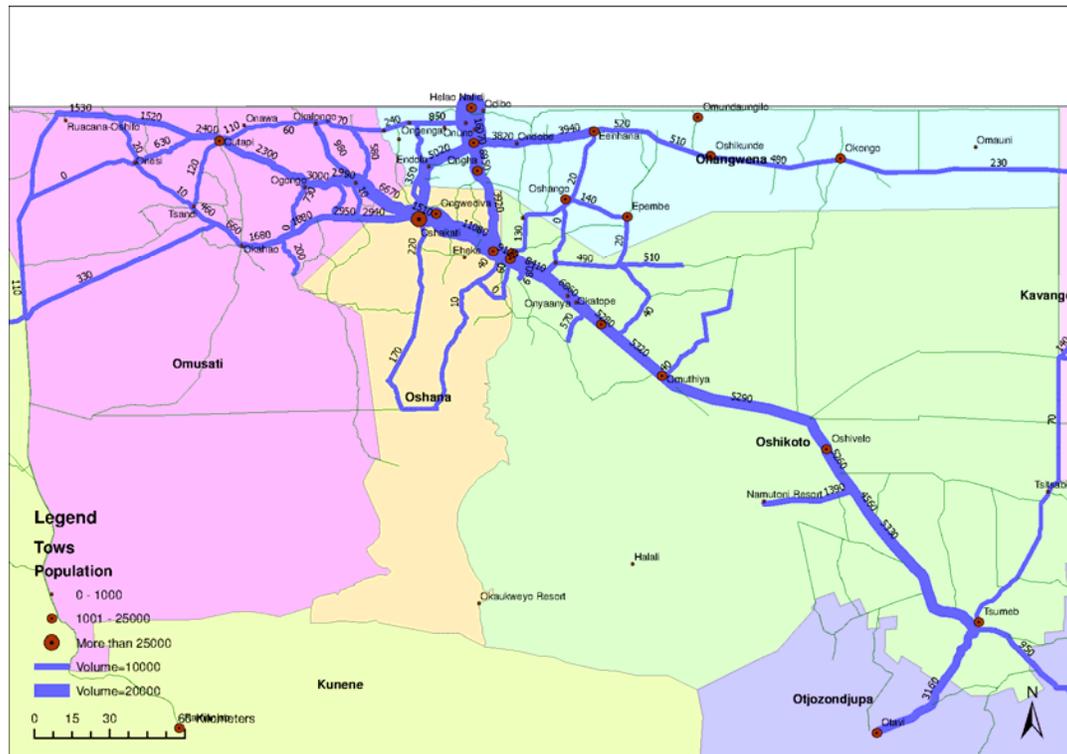
Figure 1-4: Public and private transport passenger share



However, during the OD surveys it was observed that a significant percentage of the stopped cars and bakkies were actually working as informal taxis. At the end of the surveys the percentage of informal taxis was estimated at 30% for cars and at 20% for bakkies. When applying these percentage rates to the total share of passengers using cars and bakkies, the resulting percentage of passengers using public transport would increase to almost 50%.

This following figure shows the calculated passenger traffic volumes assigned by network link. For the main road, between Oshakati to Tsumeb, the average volume is about 5000 passengers with a peak between Oshakati and Ongwediva arriving close to 15000 passengers per day.

Figure 1-5: Passenger traffic volumes (per day both directions) for the four study regions

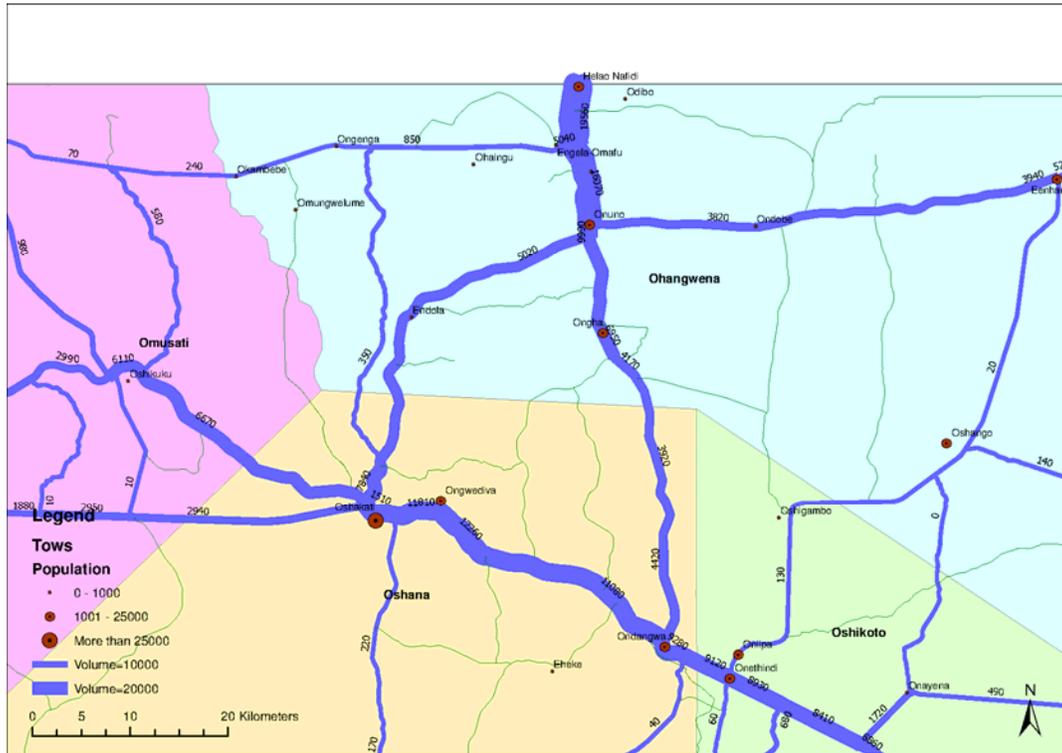


The main trunk is completed by the two roads leading to Oshikango and Eenhana. Labels showing the passenger traffic volume have been inserted in order to ease the comprehension of the map.

The volumes can be better appreciated in the following map which is a zoom to the triangle Oshakati-Oshikango-Ondangwa. It shows clearly that the daily volume of passengers from Oshakati to Ondangwa is between 11,000 and 12,000 passengers per day. This figure does not take into account local traffic, namely, travels happening inside a constituency. The link Oshikango-Onuno carries almost 20,000 passengers per day. On the Eenhana-Onuno, Onuno-Ondangwa and Onuno-Oshakati² links, the daily volume of passengers varies between 4,000 and 7,000.

² The C45 between Oshakati and the B1 is currently being rehabilitated/upgraded. To provide a realistic picture of the expected traffic, the assignment to this route was carried out as if the project had already been completed.

Figure 1-6: Passenger traffic volumes (per day both directions) on the Oshakati-Ondangwa-Oshikango triangle



On this basis also a traffic forecast was prepared taking into account traffic growth factors provided by the RRMP study. The factor provided is an average growth rate of 4.1% yearly, for all types of vehicles in all four regions.

This figure leads to an increase of traffic in the forecast horizon year of 2035 of roughly 120%. That means, the number of passengers will be 2.2 times today's number. Based on these assumptions, also separate matrices for taxis, bakkies and buses were calculated and it can be demonstrated that the increasing number of overall public transport passengers will clearly justify the introduction of regional public transport services for major corridors.

In the proposed second (master plan) phase of this project, the identification of optimisation and improvement opportunities will be based on the model results analysis and different scenarios (for instance on medium or long distance services) will be coded.

1.8 Proposed project interventions/measures

Thirty project interventions/measures to improve regional transport (service) delivery are proposed as a result of this scoping study. The projects/measures take into account the issues, concerns and challenges raised during the consultation process by stakeholders.

The identified list of projects/measures has been sorted into broader groupings to ensure that smaller and/or complementary projects/measures have the same opportunity of being selected as larger ones that are more visible.

All projects should be subject to further analysis, the results of which could be incorporated into the project screening/prioritisation criteria presented below. There are various methods available to evaluate a project. Three methods which would suit the diverse list of measures/projects identified include:

1. Policy, planning and regulation (PPR) studies - require minimum finance/ but do require high stakeholder collaboration;
2. (Pre)feasibility level studies - evaluation using cost-effectiveness or cost-benefit analysis techniques; and
3. Pilot study – is a project preparatory study requiring collaboration between national regional and local level government in the design and financing to test the viability of the project before going to implementation.

The aim of the phase 2 of the project would be to reduce the lead time normally associated in getting projects to implementation status, in accordance with the priorities expressed by the steering committee and concerned stakeholders.

Projects/measures are first presented in the project information summary Table 1-1. More details about the different categories and individual projects and measures are provided in Annex 1.

Table 1-1: List of transport sector interventions

Category	Reference number and description	No	
Sector level support (SL)	SL01	Integrated transport/land use planning	1
	SL02	Bench marking public transport quality of service	2
	SL03	Rural road network development plan	3
	SL04	Regional transport performance atlas	4
	SL05	Public transport management	5
	SL06	Weathering of road markings	6
	SL07	Improving regional air service connectivity	7
	SL08	Public Service obligation funding models	8
	SL09	Creation of a National Transport Authority	9
Urban transport (UT)	UT01	Management of the road reserve on national roads	10
	UT02	Development of an urban road function hierarchy	11
	UT03	Road side information services	12

Category	Reference number and description		No
	UT04	Public transport services	13
	UT05	On-demand urban transport services	14
Rural transport (NU)	NU01	Vehicle pull-offs and laybys	15
	NU02	Virtual rural transport hubs	16
	NU03	On-demand rural transport services	17
	NU04	Provision of school bus services	18
Traffic management (TM)	TM01	Traffic calming to address excessive speed	19
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Non-motorised transport (NT)	NM01	Mapping short-distance trip making	21
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	RS04	RS04 Promoting community based road safety programmes	29
	RS05	RS05 Systems approach to road safety	30

Source: Consultant

Summary information about the six categories of interventions is presented in section 11.4 of the main report, addressing the key points listed below:

- Identified need: What need(s) is the intervention to address;
- Benefits: Direct and indirect benefits are identified;
- Features: Main characteristics/components of the intervention;
- Project ownership: The stakeholders who own and guide project activities; and
- Timeline: The means by which a project/measure will be implemented within a certain time period.

1.9 Next steps

The project has gone through a comprehensive process of engagement and collaboration with the MWT, MURD, RCs, LAs, FPs, the TC and the SC. To complement the findings and recommendations, which are presented in this scoping report, a plan has been prepared to guide the responsible decision makers in their review and deliberations prior to taking the decision to proceed to phase 2.

Steering committee meeting/first screening of projects/measures

The steering committee comprises the permanent secretaries of the MWT and MURD as chair persons, and the chief regional officers (CROs) and chief executive officers (CEOs) respectively from the four RCs and ten LAs. The role function and responsibilities of the steering committee (SC) are set out in the steering committee's terms of reference. The SC met for the first time in June 2015.

It was agreed in the first SC meeting in June that the committee will convene at a suitable time after the submission of the scoping study report to endorse the report. Agreement should further be reached in respect to:

- Continuation of the project to proceed to phase 2;
- Priority projects/measures to be addressed in phase 2;
- Prioritisation criteria to be applied; and
- Methods to increase stakeholder engagement.

Under a no-budget constraint public sector financial environment, all 30 listed projects could be selected for implementation. However, the real constraints of a lack of financial resources for implementation of projects have continually been raised by regional councils and local authorities throughout the consultation process.

The first step (see **Figure 1-7**) to proceed to phase 2 should therefore be a review of the long list of projects in order to decide which projects would be supported and be subject to further evaluation/screening and more detailed preparation in phase 2.

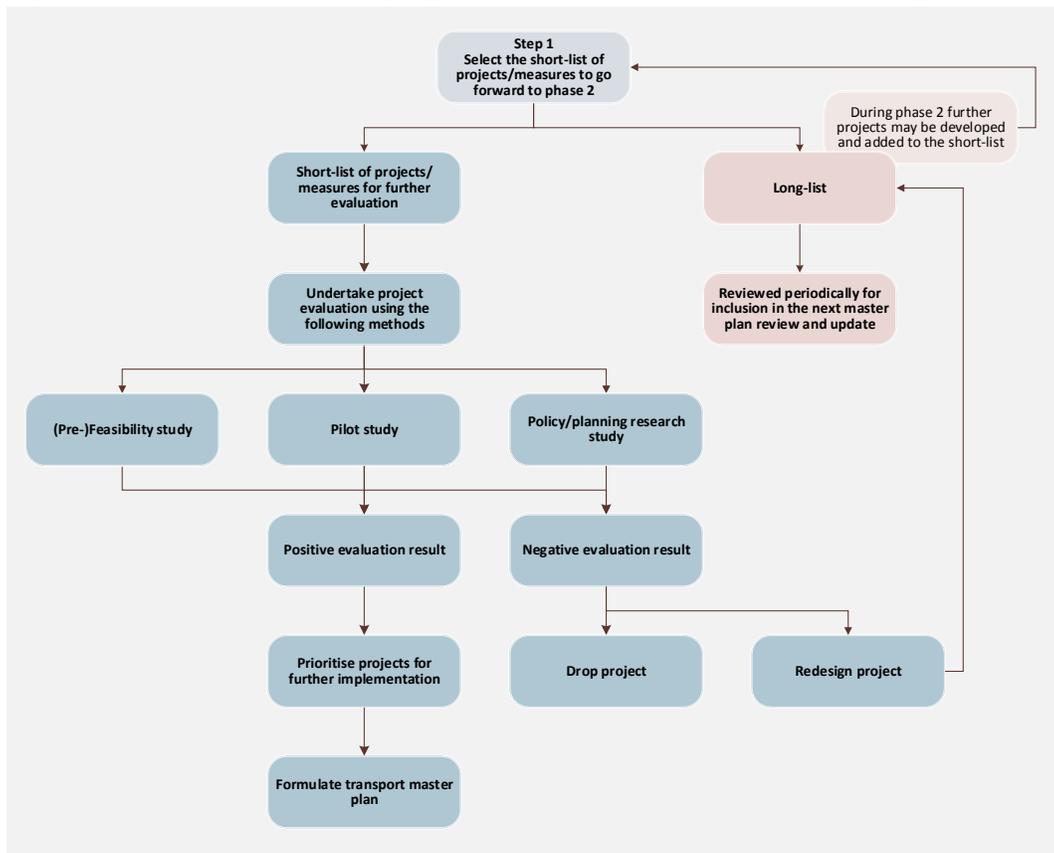
At this stage, the SC might take the decision that all projects should be moved to phase 2 for further analysis or take a decision to delete particular projects from the short-list. Of course, the SC might also decide to add additional project ideas to the list, which are considered to be of high priority but were not yet addressed in the scoping study.

However, the possible depth of the analysis in the evaluation studies will also be related to the number of projects/measures that will be selected for further evaluation/screening during phase 2.

Any projects that would not be shortlisted might remain in the long list and would be considered at subsequent technical and steering committee meetings or at a time when the transport master plan comes under periodic review and update. The remaining long list would also be added to as the sector develops and new projects emerge. In other words, the identification and definition of possible projects for the master plan is considered to be an ongoing process and the step 1 of selection of priority projects for further evaluation could accordingly be repeated at subsequent SC meetings during phase 2.

An illustration of the proposed evaluation/screening process is provided in Figure 1-7 below.

Figure 1-7: Process of screening of projects/measures for inclusion to the master plan



Criteria for project evaluation, screening and prioritisation in phase 2

In order to be considered for further inclusion to the master plan, projects need to be screened and prioritised using specific performance criteria that meet at least the key criteria for the project. In addition, a set of additional criteria have been developed to more closely align the project with its strategic direction as follows:

Key criteria:

1. *Cost-effective*: meaning that the relative costs and outcomes of an identified project are compared to assess the extent to which it provides value-for-money;
2. *Financially sustainable over the longer-term*: the benefit of the project to the community is clearly understood and supported by the CEO's and CRO's of the regional councils and local authorities in the regions in which the project(s) is/are being implemented; and
3. *Promoting equity*: the benefit of projects for lower income groups can be clearly shown, for instance when projects lead to an increase of income opportunities or improve the access to social services.

Additional criteria that could be used in the evaluation include:

1. *Be within the financial capacities of the regional and town councils and municipalities:* where possible the cost or part thereof to implement a project should be easily fundable from the authorities annual revenue budget;
2. *Relatively easy to implement:* could mean that the resources necessary to implement the project are readily obtainable in the northern regions or at least within the country;
3. *Include where possible, the involvement of the communities within the vicinity of the project:* employing local communities can have the effect of shifting the ownership of the project and hence the responsibility for the project to be maintained over the longer-term. It is expected that there would be some form of monetary reward to ensure sustainability, as well as there being an improvement in either or both local transport accessibility and regional connectivity; and
4. *Can be easily maintained and preferably constructed with local resources:* the project uses local resources and skills which will have the effect of bringing additional income to the regions.

The screening of the projects that have positive evaluation results would be performed based on the outcome of the different types of (pre)feasibility, pilot and policy/planning research studies, using multicriteria analysis.

Measures to increase stakeholder engagement

The strategies to engage with stakeholders during phase 1 included:

- Information sharing workshops with RCs, LA, and the private sector;
- Workshops at which participants were invited by the RC focal person;
- Public hearings where participants were invited via advertisements placed in newspapers circulating in the regions. Advertisements were both in English and Oshivambo;
- News broadcasts over local radio following newspaper advertisements;
- News items uploaded to the web portal, twitter, and Facebook sites;
- Specific presentations to include more photographs and pictorial representations of the points to be presented in place of more technical presentations.

Although well attended, participation rates at the workshops in February 2015 were lower than expected. The second series of workshops held in August/September was not as well attended. Many invitees confirmed attendance at meetings but did not attend. Public hearings were poorly attended although they were advertised in newspapers and on radio and held on Saturday mornings/afternoons.

To increase engagement with stakeholders for phase 2 it is recommended that:

- Members of the technical committee (focal persons) assume ownership for the organisation of both workshops and public hearings;
- The project would prepare the necessary materials in advance of meeting dates to issue invitations and media advertising materials.

To increase participation at public hearings:

Regional councillors would be requested to take the responsibility for sending out invitations to their local constituency members. Meeting places could include schools, churches, local community youth centres and similar places where communities would normally expect to meet.

Developing best practice solutions

There are many ‘best practice’ models which can be used to develop more detailed implementation strategies for proposed projects/measures. In most cases, one or more components of these models may need to be adapted to the Namibian experience. This ensures that the design of projects fits closely with the needs of the RCs, LAs and communities to benefit from the project.

Best practice models to be proposed can come from the Southern African region or from other countries with similar environments, or from the experience gained from developed countries in addressing similar situations. In some cases, a new model to address a particular project will be designed with input from the organisations/communities involved with assistance from specialists in the area of interest.

Draft matrix of transportation projects/measures

Draft matrix of transportation projects/measures

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
1. National level sector support (NL)						
SL01		Capacity strengthening Coordinated infrastructure planning Community involvement	<p>Integrated transport/land-use planning This project responds to a number of issues raised concerning the planning process. NDP revisions do include public consultations from the village upwards. However, planning at the regional level could benefit from adopting the same process when considering the complementary benefits achievable from involving the end users of transport projects. Adopting integrated transport/land-use planning can benefit Regional and Local Governments and communities in three ways:</p> <ol style="list-style-type: none"> 1. Projects identified as part of a holistic planning approach tend to respond better to community needs. It enables communities to select projects which combine transport mobility, accessibility, and connectivity with economic development objectives, leading to improved quality-of life, and reduced impact on the environment. 2. The more planning is coordinated with the communities deriving the benefits the easier it is to gain community support. 3. Coordinated planning has the desired effect of developing more community and environmentally sustainable land use plans and policies. 	<p>The project will strengthen the capacity of regional and local authority development planners to prepare 5 and 10 year integrated land-use / transport development plans (ILUTP). The project would:</p> <ul style="list-style-type: none"> • Review current MURD level policy, RC and LA planning rules, regulations and guidelines, processes and procedures etc. • Work with Governors and respective CROs/CEOs to commit to supporting staff of planning divisions to attend training courses, and apply the skills and competencies learned to planning activities. • Partner with UNAM to establish a comprehensive Diploma course in land-use/transport planning. • Identify persons in RCs/LAs to attend train the trainer courses. Such persons would then act as mentors to other planning division staff in applying ILUTP skills. • Establish an annual regional ILUTP forum to become active in the formulation of planning policy and planning debate, exchange ideas and planning programmes, and enable networking for further collaboration on specific issues affecting regions. 	MWT, MURD, RCs, LAs, UNAM	Direct
SL02	National initiative	Policy and regulation Sector reform Oversight Performance monitoring and evaluation	<p>Bench marking public transport quality of service Benchmarking involves measuring the performance of an organisations' operations against that of (a) competitor(s) in the same market. In the case where there is no competitor, comparison can be with public transport operations in a neighbouring country that has a record of successfully implementing public transport sector reform. Benchmarking provides an insight an organisations'</p>	<p>The aim is to move to a position where regulators, operators, and public transport users collaborate to improve public transport in terms of quality of services components (reliability, timeliness, affordability, safety, comfort, and frequency) provided by public and private sector service providers:</p> <ul style="list-style-type: none"> • Meet with the MWT, NABTA, NPPTA, and LAs to gauge the willingness of transport operators to commit to the development of a Quality Management or Quality Assurance system for the man- 	MWT, NABTA, NPPTA, RGs, LAs	Pilot

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
			<p>operational performance and helps them to improve. There are many benefits of benchmarking including:</p> <ul style="list-style-type: none"> • Identify and prioritise specific areas of opportunity; • Understand customers' needs better; • Identifying an organisations' strengths and weaknesses; • Set goals/targets and performance expectations to measure the process of reform; • Monitor performance and become more effective in managing change; • Understand how becoming more competitive improves efficiency in delivering sector services to the benefit of both service suppliers and users. 	<p>agement of public transport operations.</p> <ul style="list-style-type: none"> • Enable RCs and LAs to supply transport infrastructure/facilities/terminals that support service providers to consistently meet transport user needs and expectations, and operating regulatory requirements. • Assist private operators through NABTA/NPPTA to comply with their sector policy/regulations and contract and operating obligations. • Prepare an action plan to develop a regional level Public Transport Operator Quality Management System for operators including: business skill, contracting, HRD programmes, managing performance and reporting. 		
SL03	National initiative	<p>Sector investment performance and evaluation</p> <p>Improved rural/urban community integration</p>	<p>Rural road network development plan</p> <p>Develop a Road Accessibility Master Plan to enable Government to highlight areas not complying with the vision <i>"to have all-weather roads within 2km of each and every homestead/village"</i>. The plan to be used in setting priorities for construction of new access roads/road upgrading and to be coordinated with ongoing review/output from the updating of the 2008 Regional Road Network Master Plan.</p> <p>Issues relating to rural access roads were raised at workshops that many schools are located further than 2km from an all-weather road with no engineered road access.</p> <p>An output would be the development of a rural road accessibility and regional road connectivity index to assist in guiding the preparation of a rural road network master plan. This project could be linked with project SL04.</p> <p>The index would provide a useful tool for measuring performance in delivering road infrastructure against targets.</p>	<p>Formulate a regional transport accessibility and connectivity index for application on a region wide basis with the aim to produce a national transport development index.</p> <ul style="list-style-type: none"> • Review the existing transport accessibility index maintained by the Roads Authority and recommend possible improvements. • Formulate a transport connectivity model, establish data needs, prepare a data collection plan, and construct the index. • Collaborate with UNAM in the design of the transport index, and the Polytech of Namibia in the presentation formats. • Develop a roll-out plan to engage RCs in assuming responsibility to periodically update the rural area transport accessibility/connectivity index. • Prepare and agree on a final reporting format. The index would be presented on RC web-pages. • Working with LAs to undertake similar activities to prepare an urban transport mobility index. The index could be recreational, shopping, work and social service based. 	MWT, RA, RCs, UNAM	Direct

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
SL04	National initiative	<p>Oversight</p> <p>Integrated land-use/transport planning</p> <p>Measuring performance in delivering transport services</p>	<p>Regional transport performance atlas</p> <p>A picture tells a thousand words. A transport atlas using the 2011 Regional Census Profile data would bring together a number of regional transport themes and data sets such as:</p> <ul style="list-style-type: none"> • Demographics and car ownership; • Employment patterns and journey to work; • Public transport infrastructure; • Rural transport accessibility; • Household activity and travel surveys. <p>An atlas will enhance and add value as a planning tool to targeting areas where transport infrastructure/services are not being adequately provided.</p> <p>An atlas also provides visual representations / indicators to guide the planning process in identifying geographic areas needing special attention by government sectors. Levels of transport deprivation can be easily compared against other social performance statistics to show visually the costs associated with transport deprivation.</p> <p>An atlas is a useful tool for sectors delivering outreach services, development partners targeting development aid, visual status of Namibia's performance in meeting the United Nations Millennium Development Goals (MDG) development goals.</p>	<p>Collaborate with the Polytech of Namibia to prepare a list of key social indicators linked with an indicator on transport available from the 2011 Regional Profile Census Data:</p> <ul style="list-style-type: none"> • Identify transport supply and delivery performance targets and design a performance monitoring and evaluation system and programme. • Work with regional councils' GIS mapping divisions to identify the location of village centres, and associated catchment areas of schools, hospitals, markets, churches and other community activities. • Work with LAs to map urban activity areas and motorised/non-motorised activity paths. • Engage with UNAM's engineering department to collaborate with students in additional data collection where required. • Develop in collaboration with RCs/LAs a spreadsheet model using transport atlas data to assess the benefits of implementing rural public transport projects; developing measures of rural accessibility and regional connectivity indexes. 	MWT, GIZ, RCs, LAs, Polytech, UNAM	Direct
SL05	Regional initiative	Institutional strengthening	<p>Public transport management</p> <p>To support the development of a viable alternative to the current system of public transport being operated in the regions by private operators it is recommended that an organisation is established that reports to the Minister of Transport such as a public transport board. The board would have representatives from government, private sector, and representatives from civil society.</p>	<p>MWT/MURD in collaboration with Regional Governors establish in which regional centre a base should be identified to set up the public transport board. The mandate of the board's activities will be to represent equally the activities of all four regions.</p> <p>The board would have the mandate from the Regional Governor to ensure that issues relating to public transport are effectively dealt with in a timely and</p>	MWT, MURD, NABTA, NPPTA, RAs, LAs	Direct

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
			Setting up such an organisation would have a number of benefits including: being involved in developing strategies to manage growth in demand being placed on existing transportation systems; identifying ways to increase travel choices; encourage the use of carpooling, public transit, bicycling, walking with the aim of reducing single occupant vehicle travel.	effective manner on all issues for example: location and use of transport terminals/stands, monitoring quality of service provided, and would operate a complaints system. Establish the regulations necessary to ensure the powers of the public transport board are recognised under law, and that they have a legal obligation to fulfil their mandate.		
SL06	Regional initiative	Road safety	Weathering of road markings Many issues were raised in discussion on road safety concerning the unduly quick weathering of road markings at junctions, roundabouts, the road centre line, parking areas, and pedestrian crossings, leaving motorists unclear and in many cases unaware of visual warnings.	MWT, RA and possibly UNAM could collaborate with an internationally recognised road research organisation to work with the Roads Authority and LAs to develop more robust line marking materials and methods of application for paved roads under various traffic loading and environmental conditions.	MWT, RA, UNAM	Pilot
SL07	Regional initiative	Regional airport connectivity	Improving regional air service connectivity Currently Ondangwa is the only airport operating flights to and from Windhoek in the four regions. It has been suggested that airport facilities in Ruacana, Tsumeb, Oshakati, Eenhana and Okongo could be opened up to charter operators providing for instance feeder services from the outer areas of the region into Ondangwa Airport. The service could be attractive to businesses, medical specialists, out-reach service providers, tourists, and general travellers.	Tender for a study to assess the financial and economic viability of developing the local government owned airports in partnership with the Ministry of Safety and Security and National Airports Company for small (tourist) charter flights and small seater commercial operators, for instance as an alternate destination to Ondangwa or as feeder routes into the Ondangwa airport.	MWT, MSS, NAC, RCs, LAs	Project
SL08	Regional initiative	Public transport services Public transport infrastructure Parking and	Public service obligation funding models Non-financially viable transport services will not as a rule be operated by the private sector. However, there are benefits to be achieved from contracting the operation of transport services to the private sector. The private sector often can operate at a higher level of efficiency than government run services.	Review best practice financial models for providing a scheduled bus service on high density passenger transport routes: <ul style="list-style-type: none"> Based on the findings of the origin-destination and passenger forecasting studies on the main road networks i.e. B1, C41, C45, C46 and C35 identify where forecast demand would support scheduled bus services. 	MWT	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
		permits Traffic management		<ul style="list-style-type: none"> • Tender for provision of a scheduled bus service. • If the service is found not to be viable then it would need to be subsidised. • • Redeploy taxis on the route as feeders to bus routes. • Provide formal bus and taxi interchanges in Outapi, Oshakati and Ondangwa. • Provide bus stops and shelters along routes. <p>Provide if needed, traffic management actions to support bus operations.</p>		
SL09	National initiative		<p>Creation of a National Transport Authority The development of new models for tendering public transport services would be facilitated if there is a national-level strong regulatory entity to provide the strategic and regulatory environment for the tendering of various types of public transport services and associated facilities and monitoring and oversight of the public transport sector.</p>	<p>Make legal provision for the establishment of a National Transport Authority that is sufficiently autonomous and independent to be responsible for:</p> <ul style="list-style-type: none"> • Securing the provision of public passenger transport services; • Securing the provision of public transport infrastructure, and associated NMT facilities, and <p>Provide regulation, monitoring and oversight of public transport.</p>	MWT, RAs, LAs	Direct
2. Urban transport (UT)						
UT01	Local authority initiative	Optimal management of road reserve as a community resource	<p>Management of the urban road reserve of national roads Barriers to pedestrians, bicycles, and self-propelled vehicles used by persons with disabilities are not considered as priority is placed on the mobility of vehicle users.</p> <p>Road reserves provide suitable spaces for organising city parking, development of tree lined sidewalks, multi-purpose bicycle paths and resting areas for pedestrians. Organised and well planned road reserves have the additional potential of bringing in needed revenue to</p>	<p>This project would collaborate with LA planning divisions to take control and responsibility of the proclaimed road reserve which is with the Roads Authority within their town boundaries.</p> <p>Suitable interventions would for instance be directed at improving the environment for the development of motorised and non-motorised facilities, developing paid parking areas, developing designated taxi stand areas and bus bays.</p>	MWT, MURD, RA, LAs, NABTA, NPPTA, Civil society,	Direct

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
			local authorities through charged parking arrangements. Managed road reserves assist in improving parking behaviour and enhance the introduction of improvement in traffic management.	The project could also contribute to improving and beautifying the local environment and to improving the road safety situation in urban activity streets. In addition, a concept for the maintenance of the corresponding road sections would have to be part of the project.		
UT02	Regional initiative	Road network development and optimal maintenance upkeep planning tools	<p>Development of a national urban road hierarchy A road hierarchy is a tool for improving the management and operation of town roads.</p> <p>Traditional road hierarchies have categorised roads in terms of their broad function such as highways, main roads and local roads.</p> <p>Given the increase in development of many towns in the region and the different types of vehicles using the urban road networks it is important now to develop a hierarchy in order to direct the necessary recourses to where they will be most productive.</p> <p>Giving each transport mode priority on different roads across a network helps resolve competing demands for road space.</p>	<p>The aim is to strengthen the urban road planning and development function of LAs in developing roads to meet needs at predefined minimum levels of services including road design, level of acceptable access based on needs, and maintenance programming and budgeting.</p> <p>Criteria would be developed in collaboration with LA development planners and engineering divisions:</p> <ul style="list-style-type: none"> Engage local consultants to define functional classes of urban roads based on transport/land-use needs. Assist local authorities to adopt into bylaws. Develop with LAs annual and five year road network maintenance budget programmes based on the new road hierarchy. 	MWT, LAs, UNAM as an observer	Direct
UT03	Regional initiative	Infrastructure Traffic management	<p>Roadside information services Arriving at an accident, being caught up in traffic, needing assistance?</p> <p>The purpose is to provide motorists with contact numbers to advise a centrally controlled traffic operations unit of any incidents that affect traffic flows, or to be able to call for emergency assistance.</p>	Collaborate with the Roads Authority and regional road safety forums in each region and with utility companies to develop and erect high visibility signs at traffic signals and other strategic points giving contact numbers for the public to report faults in traffic signal operation, road accidents, poorly maintained roads, and removal of dead animals, etc., to the relevant authorities.	RA, Regional utility companies, Regional road safety forums	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
UT04	Regional initiative	Bus and taxi terminal infrastructure	<p>Public transport service facilities Action is needed to more efficiently and effectively manage the location and use of terminal facilities by private operators providing public transport services. The aim is to move taxis and mini-buses away from areas where their presence interferes and interrupts normal traffic flows. In many cases, unnecessary congestion is caused at road interchanges, fuel stations and outside commercial developments.</p> <p>The project also addresses the design of public transport terminal facilities, bus stops, shelters, laybys, taxi stands, and transport operator office/rest facilities.</p>	<p>Such a project would include:</p> <ul style="list-style-type: none"> • Establishment of control standards to ensure that provision for short-stay free-use taxi ranks/stands and bus and taxi stands are provided at airports, railway stations, and major developments. • Production of guidelines for the design of public transport facilities including terminals, stands, stops, shelters and depots. • Review of the Road Design Manual to ensure that the above guidelines on designs and layouts of off-road public transport stopping facilities are incorporated into road design. 	MWT, RA, LAs, NABTA, NPPTA,	Project
UT05	Regional initiative	<p>Coordinated public transport services</p> <p>Special needs services</p> <p>Awareness training</p>	<p>On-demand short to medium-distance urban transport services Currently taxi services provide services along sealed roads. Some drivers will operate on urban gravel roads but at a premium fare.</p> <p>It is generally agreed that demand is not sufficient in many urban areas to operate a scheduled public bus service.</p>	<p>Propose is develop a new market for taxi operators by partnering with a group of owner operators to set up a central on-demand call centre.</p> <p>Drivers registered with the centre would be able to work independently of the call centre as well as pickup customers who have called into the centre to book a taxi at a specified time.</p> <ul style="list-style-type: none"> • An additional pickup charge would be added to the normal fare charged. • Taxis would pick up/set down on gravel urban roads. • Registered drivers would be trained in the special needs of people with disabilities. • Trained drivers operating specially equipped vehicles for transporting customers with special needs could be eligible for a subsidy to cover the cost of necessary vehicle modifications. 	MWT, RC, LA , NABTA, NPPTA,	Pilot

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
3. Traffic management projects (TM)						
TM01	Regional initiative	Traffic management Road safety	<p>Traffic calming to address excessive speed Speeding along inner urban roads and residential areas has been raised as an issue for the safety of users of non-motorised means of transport.</p> <p>Most traffic on inner urban roads is foot traffic. Residential activities such as cuka shops, small businesses, children playing often spill out onto the road. Unpaved urban roads that are in many cases serving informal housing are very dusty, un-engineered, and poorly maintained.</p> <p>There is a need to extend the pavement of roads of RA roads further into the urban road network as a matter of safety for drivers leaving or entering a RA road. Project UT02 complements this project.</p>	<p>Review current methods used formally by LAs on paved roads and informally by local residents on gravel roads to reduce speeding.</p> <p>Define urban road networks according to their function (Project UT02).</p> <p>Prepare pilot traffic calming study to identify the best traffic calming solutions for managing speed restrictions on both urban streets and national roads passing through towns and villages. Identify a town in each region to carry out the study. Design a study to trial various traffic calming designs to determine their ability to better manage average traffic design speeds.</p>	MURD, MWT, RA, LAs	Project
TM02	National initiative	Capacity building Code of practice Road safety	<p>Traffic management for road works The management of traffic at roads works sites could be significantly improved by providing greater overall control over motorists, pedestrians and the safety of contractor staff and equipment.</p> <p>Road works are generally poorly controlled and managed often leaving motorists unclear about what is expected from them on reaching work site. Traffic at a worksite can include:</p> <ul style="list-style-type: none"> • Vehicles like cars, trucks, vans, buses and powered mobile plant like forklifts; • Cyclists; and • Pedestrians including workers, visitors to the workplace and members of the public. 	<p>There needs to be a standardised guideline on a Traffic Management Code of Practice for road works that will develop enhanced standards for temporary traffic management at road works:</p> <ul style="list-style-type: none"> • Design a code of practice to: <ul style="list-style-type: none"> - identify hazards; - assess risks if necessary; - implement the most effective control measures that are reasonably practicable in the circumstances; - review control measures to ensure they are working as planned. • Design guides and coordination guidelines between the Roads Authority, local authorities, road contractors and utility companies- • Design standardised traffic warning and direction signs visible at night. 	MWT, RA, LAs	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
				<ul style="list-style-type: none"> • Design minimum training standards for staff tasked with controlling and directing traffic. • Design a short course in traffic management at work sites including both personal and road user safety. • All private contracts for road works or works being carried out by LAs would by law carry out all necessary rules and regulations as stipulated by the guidelines. 		
4. Non-motorised transport (NM)						
NM01	Regional initiative	Non-motorised infrastructure planning Road safety	<p>Mapping short-distance trip making</p> <p>To begin to plan infrastructure such as sidewalks and cycle paths LAs would first need to understand the location of corridors, number of pedestrians using the corridors by time of day, and the main directions pedestrians move. The aim is to map these corridors in terms of where the traffic comes from and goes to decide where sidewalks and bicycle paths should be constructed.</p> <p>Links with project UT01.</p>	<p>In collaboration with LAs design a study to map daily non-motorised movements including movements originating from outside the urban boundary.</p> <ul style="list-style-type: none"> • At strategic points along urban roads conduct an origin-destination survey to determine reasons for travel and origin and destination of main trips taken i.e. home-work, home-school, home-shops/medical centre/visit friends and family/post-office, church. • Identify main road crossings used by school children, pedestrians, cyclists, the disabled, and the elderly. • Analyse the results in collaboration with the UNAM Faculty of Engineering. • Prepare a non-motorised network plan with infrastructure recommendations for each LA engaged in the project. <p>Provide implementation costings and development plan of actions.</p>	MWT, LAs, UNAM	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
NM02	Regional initiative	Institutional strengthening	<p>NMT infrastructure design standards</p> <p>In a car dominated country consideration for the needs of NMT has been given little attention in the design of transport infrastructure.</p> <p>LA budgets may not extend to the provision of safe infrastructure for NMT modes of transport. Currently, cycle ways and sidewalks must wait as the provision of public housing for example takes a greater priority.</p>	<p>In collaboration with RC and LA planners work with the MWT to develop policy appropriate to meeting the access and safety standards of NMT.</p> <p>Ensure LAs and the RA are mandated to implement the policy in new design and construction works and retro fitting existing infrastructure, facilities and terminals.</p> <p>Adopt suitable design guidelines for NMT facilities (e.g. NMT Facility Guidelines 2014, RSA) modified to regional conditions.</p>	MWT, RA, RCs, LAs,	Project
NM03	Local authority initiative	Promoting short-distance sustainable transport	<p>Promote cycling for cost effective short-distance trip making</p> <p>The availability of new and reconditioned bicycles offered on the market at affordable prices has yet to be developed.</p> <p>Some cycling is observed in the regions as a means of short-distance transport to and from work. However, most people will not use bicycles for safety reasons and lack of facilities.</p>	<p>In collaboration with a cycling association:</p> <ul style="list-style-type: none"> Recommend that LAs collaborate with bicycle interest groups to further support local businesses to import used cycles, recondition them and make them available at affordable prices in towns and smaller local centres serving remote areas. Prepare a business plan for sourcing local and/or cloud finance to establish a bicycle culture. Establish safety regulations and bicycle training schools to promote safe cycling, and programmes for motorists to recognise the needs of pedestrians and cyclists. 	MWT, MURD, LAs, Cycling organisation	Project
NM04	Regional initiative	Institutional strengthening	<p>Transportation for people with disabilities</p> <p>The transport needs for people with disabilities have tended to be forgotten. Transport access for most if not all is limited. Awareness training about the needs of people with disabilities has been undertaken with some taxi drivers. But specialised transport or transport services do not yet exist.</p> <p>Providing tailored transport services will allow many to engage in day-to-day social and employment activities as meets their needs and expectations.</p>	<p>Design a study to:</p> <ul style="list-style-type: none"> Collaborate with The National Federation of People with Disabilities in Namibia (NFPDN) in designing a project that correctly identifies the needs of people with various disabilities. Develop public transport service provider awareness programmes in collaboration with the Ministry of Health, LAs, NGO's and public transport lobby groups. 	MWT, MURD, RCs, LAs, NFPDN	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
NM05	National initiative	Policy and regulation	Maximising personal safety As a personal safety issue, walking or cycling on roads is dangerous especially at night.	Design a study to: <ul style="list-style-type: none"> Formulate policy and regulation covering rights and responsibilities including mandatory safety clothing, helmets and reflective jackets for cyclists and reflective jackets for pedestrians. Use of reflective materials for other forms of transport including animal drawn carts, wheelchairs, etc. Engage with a local company to manufacture reflective clothing, and reflectors/reflective materials for use at night by non-motorised transport to be supported by the private sector. 	MWT, MVA, Road Safety, Council, Traffic Police	Project
5. Rural transport (RT)						
RT01	Regional initiative	Public transport stopping facilities at settlements Road safety Public transport	Vehicle pull-offs and laybys areas Persons waiting to catch a taxi by the side of the road or to be dropped off often require taxi drivers to pull off the road without advance notice to following drivers. In many cases there is a drop-off from the paved carriageway to the gravel road shoulder. Pulling-off and getting back to the road is a hazard to the vehicle driver, to other drivers, and to passengers.	Based on the regional road network developed plan being prepared for the Roads Authority (updating the 2008 Northern Region Road Network Master Plan), making use of available GIS data and 2011 Household Census data on the spatial location of rural communities: <ul style="list-style-type: none"> Based on community mapping identify points on paved roads for the provision of all-weather pull-off / stopping facilities adjacent to settlements and road junctions (i.e. sealed pull-offs away from or raised gravel pull-off areas at a safe distance from the road shoulder). Promote the design and erection of vehicle stopping / layby warning signs. Prepare a staged plan to construct gravel pull-off using labour-based construction techniques to give ownership for upkeep to adjacent communities on a length-man contract basis. Tender out small packages (30 stopping facilities/package) to local contractors particularly labour based contractors. Construct permanent vandal proof shelter at pull-offs. 	RA, RCs, Traditional leaders	Direct

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
				<ul style="list-style-type: none"> Engage with local councillors and community elders to encourage use of the laybys of local people. 		
RT02	Regional initiative	<p>On-demand transport services</p> <p>Terminal service points</p>	<p>Virtual rural transport hubs</p> <p>The spatial distribution of villages and settlements makes it a real challenge to operate rural public transport services. And it is costly to provide infrastructure that may only be used infrequently.</p> <p>It is proposed to address this situation by identifying a network of virtual pick-up points based on demand from a specific location designated by a numbered sign post located at strategic locations on the rural road network. Each virtual location would serve a catchment area. Transport services would be requested through a central booking centre. Bookings might be paid using an e-wallet service supported by a communications provider in collaboration with a bank or other financial institution.</p>	<p>Work with RCs and a financial institution to establish a network of virtual rural transport hubs to be operated by local vehicle owners/operators:</p> <ul style="list-style-type: none"> Work with regional councillors, senior headmen and traditional leaders to identify virtual terminal locations. Identify catchment areas. Hub locations should be within 2km walking distance to all members of the catchment area. Households to be advised of their nearest virtual terminal. <p>In time a rural bus/taxi service route network could be developed to use the terminal facilities depending on settlement patterns and available road networks. Collaborate with the UNAM Faculty of Engineering with the aim to identify a network of virtual rural public transport hubs:</p> <ol style="list-style-type: none"> Work with regional councils' mapping divisions to identify village centres. Identify criteria for identifying and selecting virtual hubs. Assist with designing the study. Identify performance targets and design a performance monitoring and evaluation programme. Propose a programme including a full list of costed activities to implement a pilot study involving interested engineering students in data collection and performance monitoring. With the project consultant propose a plan with budget to establish a pilot project. <p>Prepare guidelines to enable extension of the study to regions to the east and west of the project region.</p>	MWT, RCs, Councillors, Communities, UNAM	Pilot

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
RT03	Regional initiative	Public transport services Parking and permits	<p>School bus services to rural areas Currently learners walk to school in all weathers. Provision of a regular, safe and reliable bus service to rural schools would ensure all learners reach school on time.</p> <p>Bus services could include the transport of teachers without cars or that do not want to use their cars on gravel roads.</p>	<p>Consult with Ministry of Education, councillors, school principals, parents and a public or private sector operator to supply rural/non-urban school bus services.</p> <ul style="list-style-type: none"> • With the Polytech of Namibia locate all schools using GIS mapping technology. • Visit a sample of schools to map learners' journeys to and from schools to identify school bus catchment areas. • Collaborate with RCs and private sector transport operators to design a workable model for the operation of school bus services over an agreed trial period. <p>It is expected that such services would be procured via a subsidised service arrangement requiring several small/medium buses.</p>	MWT, MURD, Governors, RCs, Min. Education, Polytech of Namibia	Pilot
RT04	Regional initiative	Coordinated rural public transport services Special needs services Awareness training	<p>On-demand short to medium-distance urban transport services Currently taxi services provide services along sealed roads. Some drivers will operate on rural gravel road but at a premium fare.</p> <p>It is generally agreed that demand is not sufficient in rural areas to operate an on-demand public transport service.</p> <p>Services would be operated by a rural based private operator under a contract to provide on-demand services. The contract could include provision of a vehicle more suited to the needs of a public service on gravel roads vehicle on an arranged pay back arrangement.</p>	<p>Develop a new market for taxi operators by partnering with a group of owner operators to set up a central on-demand call centre.</p> <p>Drivers registered with the centre would be able to work independently of the call centre as well as pickup customers who have called into the centre to book a taxi at a specified time.</p> <ul style="list-style-type: none"> • An additional pickup charge would be added to the normal fare charged. • To be based in urban centres. • Taxies would pick up/set down on gravel urban roads. • Registered drivers would be trained in the special needs of people with disabilities. <p>Drivers operating vehicles specially equipped for transporting customers with special needs would be eligible for a transport subsidy to cover the cost of any necessary vehicle modification.</p>	MWT, RC, LA, NABTA, NPPTA	Pilot

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6. Road Safety (RSP)						
RS01	National initiative	Road Safety education programmes aimed at learners and rural communities	<p>School road safety education programme The most effective way to produce good road safety behaviour in learners and rural communities is to develop road safety education programmes for the young.</p> <p>In many instances learners have to cross busy roads and highways to reach their school. Although there are no available data, children walking along the side of the road, running in front of vehicles is a common problem in urban and rural areas.</p> <p>Often, rural people come to town without an understanding of road safety or an understanding on signs, road markings, robots and pedestrian crossings.</p>	<p>Working with the Namibian Road Safety Council, Traffic Police, the MVA Fund, prepare a rural community and learners road safety programme to include:</p> <ul style="list-style-type: none"> • Develop pictorial road safety highway code for adults and learners. • Develop education reference guideline and materials for teachers. • Collaborate with regional road safety forums to develop a role out programme to urban and rural schools, medical centres, churches, youth centres, etc. • Collaborate with police to deliver road safety training as part of their crime prevention training programmes. <p>Develop an annual schools road safety competition to promote international road safety day and a more locally based national road safety week.</p>	MWT, RSC, RC, Road safety forums, NAMPOL, RA	Project
RS02	Regional initiative	Pilot study Variable speed limits	<p>Reducing road crashes Speeding at any time of the day is breaking the law and endangering lives. However, speeding at night can be far more dangerous because the driver reaction time to avoid animals and livestock standing in the road, and pot holes must be much faster if an accident is to be avoided.</p>	<p>Design a study to identify a section where variable speed limits for day versus night speed limits can be implemented and tested, with specific reference to sections with high numbers of animals at night.</p> <p>Identify traditional crossing paths used by livestock. Develop warning signs and road markings to increase awareness of drivers entering a livestock hazard zone – including solar powered day and night warning signs.</p>	MWT, NRSC, Traffic Police, RCs, TCs	Project
RS03	Regional initiative	Strategic law enforcement programme	<p>Enforcement and penalties Observation of current driver behaviour (especially of taxi drivers) suggests that there is not sufficient capacity available to the Traffic Police to charge drivers and passengers for flouting of traffic laws.</p>	<p>Design a programme in collaboration with the Traffic Police to strengthen enforcement of the law and system of penalties. Strengthen local courts to enforce penalties without political interference.</p> <p>Amend and update Traffic Act with the focus on specific issues such as non-compliance with traffic rules and regulations e.g. speeding, barrier line overtaking, illegal parking on road shoulders.</p>	RCs, LCs, NRSC, Traffic Police	Project

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
RS04	Regional initiative	Pilot study to reinstate the road reserve as the Roads Authority's legal right of way	<p>Promoting community based road safety programmes Collisions with animals and livestock represented some 40% of the reasons given for traffic crashes. Speeding, tiredness, use of mobile phones are main contributors that significantly diminish the capability of drivers to avoid crashes.</p> <p>It's a situation that is currently outside the resources available to the Traffic Police to control.</p>	<p>Design a pilot programme to establish community road safety committees under the supervision of a regional councillor to work with regional road safety forums chaired by governors.</p> <p>Work with councillors and CROs to gain grass roots support and action from local people in collaborating to change the behaviour of drivers in their communities.</p> <p>Establish a terms of reference for the community road safety committee setting out the mandate and responsibilities as road safety relates to:</p> <ul style="list-style-type: none"> • Liaise with local community headman and chiefs on local issues. • Assist with developing community awareness of limiting livestock, animal access to the road reserve. • Develop a community commitment to fence and continue to maintain a fully fenced road reserve. • Engage the community to stop further building encroachment on the road reserve by adjacent villages. • Establish a monitoring arrangement on a weekly basis to allow assessment of the programme. • Collaborate with livestock owners to promote adoption of an animal high visibility ear tagging programme. 	Regional councillors, Traditional Leaders, Headman, Community leaders	Pilot
RS05	Regional initiative	Road safety audit	<p>Systems approach to road safety Many issues were raised in workshops that directly and indirectly relate to ensuring that roads are safe for all travellers.</p> <p>To be consistent in ensuring that roads are safe to use given the varying degrees of education, driving skills, socio-economic backgrounds, levels of mobility, mental</p>	<p>Undertake a road safety audit on the regions paved networks B and C networks and a sample of D roads with the aim of identifying and prioritising interventions to address road safety issues:</p> <ul style="list-style-type: none"> • Design a regional road safety auditing study using the MWT's Road Safety Guideline considering road design, traffic signage, safety pull offs or lay 	MWT RA RCs LAs NAMPOL UNAM	Direct

Project Code	V2030 NDP4 Linkage	Activity	Situational Analysis	Description of the intervention	Concerned Agency	Project category
			<p>state, and numerous other factors needed to use roads. Develop a systematic way of assessing all aspects relating to ensuring a road is safe to drive. Namibia has in place a Road Safety Auditing Guideline which should be reviewed and updated where required.</p> <p>However, general observation indicates that the Guideline it is not being followed when it comes to the supply, management and operation of road infrastructure.</p>	<p>byes to be used by public transport vehicles .</p> <ul style="list-style-type: none"> • Review and update the guideline if required at the completion of the study. • Collaborate with the UNAM Faculty of Engineering to assist in drafting a road auditing course to be offered as an accredited engineering degree course at the university. <p>Based on the findings to be presented in a report, design a staged implementation strategy to be included in the transport master plan.</p>		

Source: Projects formulated from workshop proceedings